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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,796	03/06/2002	Yuan-Liang Li	219.40775X00	6702

7590

03/15/2004

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EXAMINER

MCCAMEY, ANN M

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,796

Applicant(s)

LI, YUAN-LIANG

Examiner

Ann M McCamey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Per a conversation with Walter Nielsen on 2/24/04, applicant's submission filed on 1/6/04 has been entered, and not the after final amendment of 6/24/03 filed by the previous attorney of record.

Response to Amendment

The declaration under 37 CFR 1.132 filed 1/6/04 is sufficient to overcome the rejection of claims 1-42 based upon a specific reference applied under 35 U.S.C. 102.

Claim Objections

Claims 44-46^{are} objected to because of the following informalities: it is unclear whether "reserved component area" refers to merely the area surrounding the component or a special meaning. Since support for a special meaning is not found in the specification, the limitation will be regarded as simply meaning "component area." Appropriate correction is required.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Norskov (US 6.608,259).

Norskov discloses:

a plurality of discrete electrical components mounted together by a grid array (BGA) that contacts first and second discrete electrical components (PCB and semiconductor chip);

a shunt/mechanical connector providing at least one electrical conduction path

Limitations in the claims that begin with "to provide...", "to extend...", "providable...", "to directly contact...", "engageable...", "being capable to...", etc., have been given limited patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case, the mechanical and electrical functions recited only require a structure to be

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conductive and rigid. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claims 43-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Davidson (US 6,400,576).

Davidson discloses an apparatus comprising:

a semiconductor package 40 including a die 20 and a plurality of connectors 60-1;

a receiving substrate 150; and

a plurality of shunts (110-4, 180-4, 140-4) & (100-5, 180-5, 140-5) wherein the shunt has a cross-sectional area (at 110-4 and 110-5) and a current carrying capacity (inherent with the increased cross-sectional area) greater than that of any one of the plurality of connectors;

wherein the shunt is hollow, having a frame-like structure with an open center portion, being circular and rectangular at a cross-section, and extending through the semiconductor package (considering vias 90-4 and 90-5, which are plated through-holes, as part of the shunt) having extensions 180-4, 180-5 corresponding to a holes in the substrate .

Regarding the limitation, "reserved component area" in claims 44-46, this limitation is not sufficiently defined to preclude any area of the applied art to be considered as such.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson in view of Blasi et al. (US 5,973,928).

Davidson discloses the invention substantially as claimed, but does not disclose the connectors comprising pins and the mounting assembly comprising sockets. Blasi et al. teaches a pin and socket assembly for a similar structure. It would have been obvious to one having ordinary skill in the art to replace the solder balls of Davidson with the pin and socket assembly of Blasi et al. for better mechanical retention.

Response to Arguments

Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann M McCamey whose telephone number is (571) 272-2010. The examiner can normally be reached on M-F 9-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 ex. 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMM
March 4, 2004



RENEE LUEBKE
PRIMARY EXAMINER